Autumn 2021
CAPSTONE SYMPOSIUM

Wednesday, December 1, 2021
Online, 4:30 – 7:30pm

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Students will be live-tweeting all sessions so if you miss one, follow the updates. If you tweet, we encourage you to share what you learn and use the hashtag, #POEcap.

The Capstone experience is a three-course series (ENVIR 490, 491, 492) centered on a quarter-long project-based internship with a community site partner. Capstone sites range from community based non-profits and government agencies to faculty research projects and private sector initiatives. With the mentorship of a faculty advisor and the support of the site supervisor, students gain valuable hands-on experience, explore career possibilities, and build a wide spectrum of professional communication skills.

WE THANK YOU
To all faculty advisors, site supervisors, Program on the Environmental staff and to the audience for your support. We could not have done any of this without you!
Composting is the most basic form of recycling. As humans produce more and more waste, it is important to create proper composting habits, especially at an earlier age. The purpose of this study is to discover what the successful attributes of at-home educational materials relating to farms and composting are. Considering the lack of access to on-site learning at times, particularly during times of COVID, it is important to provide the means for learning at home. I worked with Cedar Grove, a regional PNW composting company, to create various types of educational materials, which were then compiled and shared via survey. The survey was shared with people who are around children and can give their opinions on which materials seemed most interactive and informative to them. Despite respondents considering a wide age range of children, general consensus shows that higher levels of interaction are desirable for most ages. With the lack of composting education incorporated in many school curriculums, having an interactive and informative way to learn from home allows the future generations to form proper composting habits early on. With these habits, we will see organic waste being diverted from overflowing landfills and being used in a more efficient way that is beneficial for the health of the environment and the people it is home to.
Government agencies have a responsibility to protect the environment and inform the public, sharing scientific information with a broad range of stakeholders. Particularly, aquatic ecosystem knowledge among the public is limited, research remains underutilized and restoration is under-funded. The aim of the study was to uncover best practices in environmental communication that federal agencies may implement to overcome barriers that inhibit restoration action and inform the wide audiences that agencies serve. I conducted semi-formal phone interviews with NOAA Restoration Center’s partners in the Willamette River Basin. Non-profits, state agencies, and federal agencies were interviewed to discuss gaps in knowledge, environmental values, and preferred communication mediums. Following the thematic coding of interview data, responses were cross-compared with the broader literature on environmental communication. I then analyzed NOAA’s existing publications on the Willamette River Basin to make specific recommendations for stronger future outreach. Best practices identified include utilizing a diverse array of mediums that are sharable and allow for self-paced exploration. Additionally, outreach should connect scientific assessments to social values, minimize technical jargon, and be action-oriented while including tangible measures for the audience to take. Improving environmental communications, particularly for aquatic ecosystems, is central to addressing increasing environmental degradation. Education and outreach increase funding, attention, and restoration in degraded areas, thereby improving human and ecological health near these sites. Utilizing these communication strategies improves government and public relations while allowing a diverse array of communities to enjoy restored, resilient ecosystems.
Communication plays a key role in education – especially when it comes to educating about the importance of environmental topics. As podcasts continue to grow in popularity and become a more common form of media, we must better understand their structure if they are to be used as an effective tool for encouraging environmental action. The purpose of this study was to explore the best practices for using podcasts to impact environmental behavior change. To accomplish this task, I helped the University of Washington Bothell and Cascadia College produce a mini-series for their sustainability podcast. Additionally, I conducted interviews with podcast creators to learn about their own methods for using podcasts to educate and inspire. Both these methods gave me first-hand knowledge and experience on the importance of communication in environmental education. Based on my research, I found that the use of stories and anecdotes is one of the best ways to encourage individuals to take action. While the structure and content of podcasts play an important factor, individual behavior change must also be taken into consideration. Podcasts also have the potential to be used in classroom settings to educate and inspire children to take action from a young age. Although there are many benefits to current podcast structures, the inclusion of stories – as well as a consideration of individual behavior change – must be adopted to best use this mode of communication to inspire environmental action in the future.
As the human population increases, urbanization is growing across cities and with it comes added infrastructure and a demand for space, causing a significant decrease in natural areas and green spaces. Incorporating more city parks could reduce the harmful environmental effects of urbanization and improve human well being while promoting sustainable actions. This study focused on the negative environmental effects of urbanization, how we can avoid them, and the benefits we would gain from doing so. I interned with Friends of Discovery Park, a volunteer-run group that works to restore and protect Discovery Park. During the internship I performed extensive research in order to analyze the role city parks play in an urban environment. I also developed a survey to measure connectedness to nature in people at Discovery Park vs people in my hometown without a major city park nearby. My results showed that people who regularly visit city parks and have access to city parks, show a higher connectedness to nature and a better state of well-being. The people who didn't visit city parks often showed less desire to take action in protecting the environment. Increasing the amount of city parks can allow for communities to destress from the city life and build their connection with nature. This could also lead to an increase in support of environmental restoration activities to conserve and protect wildlife in city parks in this generation and the ones to follow.
Monitoring is a key component of any successful ecological restoration project. Being able to see how an ecosystem responds to restoration treatments is not only vital for planning out future restoration work, but also for more fully understanding how an ecosystem functions. The aim of this study was to examine the relationship between two culvert removals done in Carpenter Creek, a tidal creek feeding an estuarine wetland in North Kitsap, and the texture of the alluvial sediments bedded by the creek. To accomplish this task, I used the R programming language to analyze and visualize sediment texture data collected by Stillwaters Environmental Center, an environmental monitoring non-profit operating out of the local area. Sediment samples were sifted into different size grades after collection for particle size analysis. My data visualizations suggest that the first culvert removal, done near the mouth of the creek in 2012, resulted in a change in overall texture and an increase in fine sediments, while in 2014 and 2016 sediment texture drifted back towards the base state seen in 2011. In 2018, when the second culvert, this time located upstream near the marsh, was removed, a greater change in texture and increase in finer sands was observed. These results suggest that an increased level of stream connectivity has been achieved, thereby allowing a freer and more natural sediment transportation regime. This increased understanding of Carpenter Creek’s evolution was made possible through a long-term monitoring effort by local volunteers and interns.
Globally 28% of emissions come from building operations and 11% from building construction and material sourcing. Second only to transportation, building-associated emissions are the largest contributor to greenhouse gasses in King County. Worldwide and locally the built environment currently accounts for a disproportionate amount of emissions. Washington State passed the Clean Buildings Act (HB 1257, 2019) with the objective to lower fossil fuel consumption in the state’s existing and future buildings, with a focus on commercial properties. The Executive Office is rolling out the Commercial Property Accessed Clean Energy and Resiliency program to offer low-interest loans to owners of commercial property over 50,000sqft for building upgrades that lower energy use and CO2 emissions. The purpose of this study was to identify and market feasible solutions and building upgrades to be implemented on structures and properties in King County. I conducted multiple interviews with professionals and stakeholders across King County in conjunction with the production of a video series promoting the new C-PACER program. I used their qualitative accounts in conjunction with the feasibility research I conducted for King County to accomplish the study. The results state the most promising interventions are Building Automation Systems (BAS), HVAC rehauls and maintenance, envelope and insulation upgrades, refrigeration as heating in mixed-use developments, daylighting, gray water recycling, solar installations, and green roofs. Continued government enforcement of efficiency standards and funding of these intervention implementations is required. Additionally, structures smaller than 50,000sqft should be included in upcoming legislation as they are currently exempt.
As major hubs of community, innovation, and education, higher education institutions (HEIs) are viable forces of change that can set the precedent for sustainability and lead the global sustainability transformation to combat climate change. While HEIs are uniquely positioned to address challenges in sustainability, there are barriers that prevent the transition from a linear economy framework to a model that embraces zero waste concepts and prioritizes sustainability. The purpose of this study was to identify the challenges to the integration of sustainability in higher education and the best practices to overcome them. Through my internship with UW Recycling (UWR) and the Post-Landfill Action Network (PLAN), I conducted the UW’s first Zero Waste Assessment. I interviewed and surveyed 45 campus stakeholders about waste-related infrastructure, policies, procedures, and standardization and communications practices on campus. Using this data, I helped PLAN and UWR produce a report outlining potential long-term zero waste solutions for the University to improve sustainability performance. I cross-referenced this case study data with barriers and best practices pulled from academic literature. My findings indicate that HEIs must enforce interdisciplinary sustainable infrastructure change to foster positive behavioral change within campus communities. An example of this includes equipping educators with the tools, resources, and knowledge to incorporate sustainability pedagogy into their discipline. This case study provides important context to the role that universities play in climate change. HEIs facilitate the opportunity for individuals to adopt sustainable behavior change. Without existing systems that support sustainability, efforts to enforce behavioral change are ineffective.
As global temperatures increase, we’re seeing the habitat ranges expand for the invasive European green crab in Washington. This is problematic because they favor critical nursery habitat like eelgrass and marshes that contain keystone species which could result in damaging impacts to keystone species, coastal communities living in these areas, and fisheries revenue in Washington. The purpose of my research was to determine if environmental DNA (eDNA), a genetic detection method, could improve our current monitoring efforts for the green crab. I conducted my research by interviewing 17 people with a range of backgrounds in the environmental DNA field including geneticists, researchers, academics, managers, and policy makers, asking them their opinions on incorporation of eDNA sampling into invasive species management. My findings showed that all my interviewees, regardless of their area of expertise, agreed that eDNA was a valuable scientific resource, but not on its ability to improve current invasive species management policy. The three common barriers to incorporating eDNA into environmental policy were issues of funding, managers and the general public not trusting the science, and difficulties understanding what a detection means and how to communicate the results of eDNA. These results suggest a lack of trust and understanding around eDNA that must be addressed before it can be implemented into invasive species management in a policy setting. The results also suggest that there’s potential for eDNA to benefit invasive species management by increasing efficiency and sampling areas but only with improved communication between scientists, managers, and the public.
While environmental education should be available to the public, barriers are preventing marginalized groups from accessing this vital information. As the planet continues to warm and big industries continue to pollute, POC and low-income populations will continue to see disproportional health-effects of these changes. However, these same populations are the least likely to receive adequate environmental education. Now more than ever there is a necessary demand for accessible environmental justice education. The purpose of my study was to figure out Seattleite’s current knowledge on environmental justice. Additionally, I wanted to find the best way to teach environmental justice to those who are most impacted by modern-day ecological issues. To accomplish this task, I made a survey to analyze current attitudes of environmental justice. Additionally, I completed a literary analysis of numerous studies to find the best and most effective way of teaching environmental justice to urban communities. Findings show that most Seattleites are not concerned about local environmental issues. Additionally, many cite lack of knowledge as their reason for not participating in environmental justice initiatives. The deficiency of accessible educational resources is an issue that needs to be addressed as minority populations become increasingly more susceptible to unjust environmental conditions.
For decades, environmental activism has been a key part of environmentalism in the United States and abroad. However, modern strains of environmental organizing can overlook important historical realities that have led to modern-day injustice. This project attempted to investigate opinions on historical context in modern-day organizing spaces and current barriers to conducting historical research for activism purposes. To answer this question, I conducted interviews with local Seattle activists and organizers to gain information about the role of historical context in activism. I was connected to these organizers and activists through my internship with Seattle Neighborhood Greenways, a local non-profit focused on making Seattle’s streets safer and more livable for all. In my internship with Seattle Neighborhood Greenways, I researched and created a historical context that will inform ongoing community organizing. This internship gave me insight into barriers and challenges faced by organizations and movements intending to uncover histories for the purpose of informing current and future activism. My experience illustrated barriers to conducting historical research for activism, including limited accessibility of historical documents and materials as well as a general lack of historical documentation on subjects of interest. Of the activists I spoke to, all were concerned about learning and knowing the histories that create modern injustice. Additionally, all mentioned the importance of bringing awareness of historical injustice to broader audiences. These findings suggest that learning history is an essential first step towards gaining a broader historical context in activist movements.
Environmental urban development has been driven by the interests of middle and upper class white citizens, and has subsequently excluded the knowledge and needs of frontline and fenceline communities. Creating a space for knowledge production that centers the interests of these underrepresented frontline communities through Participatory Research can challenge the barriers that communities face when pursuing local changes. The aim of this study was to identify the barriers that frontline organizers, and organizers who work with frontline communities, face in their sustainability work and how these barriers may be dismantled through community owned knowledge practice in the form of Sustainable Seattle’s Participatory Research Program.

Sustainable Seattle (S2) is an environmental nonprofit that focuses on uniting a shared vision of an equitable and just transition into a sustainable society. As an intern with S2, I developed a framework for their Participatory Research Program by researching the knowledge production processes in literature and interviews that would support communal ties around shared visions of change. From this work, I found that the barriers organizers face are interconnected and rooted in structural faults within our social and bureaucratic institutions. I also identified a need for a divergence from traditional written communications and academic ways of producing knowledge in order to foster inclusive community ownership of the knowledge process. By developing spaces in which frontline communities can act upon their own needs, society as a whole can implement sustainability investments that actively seek to break cycles of oppression and create a justly sustainable Seattle.
As the effects of climate change become more prevalent in the coming years, it is imperative that species most vulnerable are identified in order to inform climate action. The purpose of this project is to define vulnerability in the context of fisheries. This was achieved through a comprehensive literature review of nine fish species in the Gulf of Alaska. The information collected through literature review was then compiled into a data matrix that was overviewed by species experts at the National Oceanic and Atmospheric Administration (NOAA) Alaska Fisheries Science Center (AFSC). Additionally, the relevance and reliability of sources used in the data matrix were evaluated and scored. The main conclusion of this project is that vulnerability for fish species is based upon a combination of several factors including ideal habitat, exposure, and sensitivity. Unfortunately, many of these key concepts are unknown for a number of fish species in the Gulf of Alaska. This unequal distribution of research efforts can be explained by the correlation between fishery economic value and research performed on the given species. Ultimately, the results of this study demonstrate the need to protect vulnerable species from the effects of climate change because they have both inherent and economic value. Furthermore, this information will be valuable to the larger scientific community as it can be used to identify the most vulnerable species and enact change to protect them.
Values are crucial influences on the choices people make and what people believe in. Climate change is an important issue that requires support and action. Recently, there has been an increased focus on climate justice. Climate justice is the intersection of climate change, human rights, and social justice. This includes proximity to environmental toxins or pollutants and the lack of access to affordable housing and healthcare. At Seattle Global Shapers, I created a web page with information on climate justice and links to donate or volunteer to climate justice initiatives. The aim of this study was to determine if there were similarities or discrepancies between the values of advocates of climate justice and advocates of climate change. To accomplish this task, I distributed a survey with 19 questions based on the Schwartz Portrait Values Questionnaire (PVQ). The values measured were self-direction, hedonism, stimulation, security, achievement, universalism, power, conformity, tradition, and benevolence. The results were calculated, showing that climate justice advocates and climate change advocates shared similar scores in all these values as well as in the value dimensions “openness to change”, “self-transcendence”, “self-enhancement” and “conservation” with the “self-transcendence” having the highest score. Appealing to the shared values of the two groups with the highest scores can potentially improve methods of communication and increase engagement in climate justice initiatives. Understanding human values in the context of climate justice communication is an important step in fighting against climate injustices in the world.
With the ever-increasing impacts of climate change comes the need for preparation. Wildfires have grown in recent years calling for better forest management practices and wildfire preparedness, however, much of the preparation resources are inaccessible. By working to make these resources more accessible, communities have the potential to become more prepared in the face of climate change. The purpose of this study is to examine the best practices of delivering need-based defensible space assistance to wildfire impacted communities in need. I interned with Fire Adapted Methow Valley, a grassroots organization focused on making the Methow a Fire Adapted Community. Specifically, I worked on their Equitable Risk Mitigation Program, which plans to bring firewise assistance to those in need. I conducted interviews, literature reviews, and surveys to find the best methods of selecting and prioritizing applicants. Through this research, I found four main components that should go into the application selection process, the level of need of the applicant, the availability of related funding, having neighbors who are also in need of firewise assistance, and the availability of services necessary to address the landscape need. Though there is more work that needs to be done to decrease the frequency and severity of the wildfire seasons we have seen in recent years, developing a robust, just, and efficient system of delivering firewise resources could mean the difference between saving or losing a home for most wildfire impacted communities.
An overwhelmingly large portion of the population faces some form of food insecurity issues, whether they realize it or not. These issues create an instability in our society. The purpose of this study was to gauge an understanding of the awareness of food insecurity issues in our society, both locally and nationally. In addition, I aimed to analyze if gleaning initiatives are sufficient enough to be an actual solution to this societal issue. I interned for City Fruit, which is a gleaning organization. My role was to harvest fruit in residential neighborhoods, public parks, and public orchards around Seattle and then donate it to various food banks and other food donation programs. In addition to this work, I interviewed three of City Fruit’s clients with the hopes of gaining insight to their reasoning and motivations behind letting City Fruit harvest their fruit. I also collected data from many scholarly journal articles that provided great knowledge and evidence. The main points that I found were that many people are simply unaware of the food insecurity issues at play. All three of my interviewees indicated that they cared about not wasting food, which was why they signed up for City Fruit’s service but were unaware of the issues that are being faced in regard to food insecurity. In addition, gleaning initiatives are found to be a very short-term fix, but not sustainable enough to be a serious long-term solution. My results are significant because they highlight that food insecurity is a real threat to many people’s well-being in our society, as well as the level of awareness is very low.
EMBRACING THE POWER OF FRIENDSHIP: THE INFLUENCE OF COLLABORATION ON INCREASING SUSTAINABILITY ENGAGEMENT

Session: B, Breakout Room #3
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Site Supervisor: Toren Elste, UW Sustainability Office, University of Washington
Faculty Advisor: Kristina Straus, Program on the Environment, University of Washington

Lack of existing engagement from institutions and students is indicative of overall lacking sustainability culture, which is needed now more than ever. The University of Washington’s first Sustainability Action goal is to double student and faculty engagement by 2025. This study intended to explore how to increase student and faculty sustainability engagement on campus and online. I interned with the UW Sustainability Office to explore how this might be possible to implement on the UW campus. I interviewed folks involved with sustainability on other university campuses for further information on common practices. They’re data collecting methodology surrounding engagement as well as how they've approached increasing sustainability at their institutions. These findings show collaboration between students and the university is critical. Improvement in this capacity is vital towards promoting a sustainable future at all, let alone universities. Additionally, institutional support is essential for change-makers in both administration and the student body. Universities have the opportunity to promote sustainability to society at large and should see it as the moral imperative of our times.
Sustainability reports play an essential role in effective climate governance. As institutions move to confront the climate impacts of their operation, the systems they use to measure, manage, and understand those impacts can empower or impede the process. This study investigates popular environmental reporting mechanisms available to institutions to identify common points of tension and propose a generalized set of best practices for their application. To accomplish this, I surveyed existing literature on the topic and interviewed eight individuals involved in climate planning at various institutions about their experiences with sustainability reporting mechanisms. Findings show data-driven governance through mechanisms like greenhouse gas (GHG) inventories could convey substantial benefits, but several drawbacks may also accompany them. GHG inventories empower long-term strategic planning, goal setting, and resource management. Ideally, GHG inventories would facilitate peer comparisons and learning, but discrepancies in inventory methodology often impede comparability. Many institutions claim to possess unique circumstances that are ill-suited to generalized reporting frameworks. Beyond GHG inventories, institutions should evaluate their investments, participation in trade organizations, lobbying efforts, and community impacts. Reporting mechanisms addressing these less quantifiable mechanisms often depend on the political skills of leadership and are dependent on interactive governance systems to be considered in sustainability reports. By addressing the subjectivity and nuance inherent to sustainability reporting, we can better apply the findings of these reports, thereby improving accountability for climate impacts and empowering transformative action.
WASTE NOT WANT NOT, ASSESSING BEST FOOD AND PLASTIC WASTE PREVENTION APPROACHES
Session: B, Breakout Room #5
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Site Supervisor: Veronica Fincher, Seattle Public Utilities
Faculty Advisor: Kristina Straus, Program on the Environment, University of Washington

Waste is a prominent environmental issue that demands our attention. It is important to go beyond simply the management and diversion of waste and prevent it from being generated in the first place. I conducted research that served as the groundwork for developing a plan to be used to advise decision-making on ways to limit waste in Seattle; I looked at food and plastic waste in particular. The aim of my project was to develop a strategic plan for how to approach the prevention of waste at the city level by analyzing successful approaches on other levels and by other actors. For this internship with Seattle Public Utilities, I did a literature review using key search terms, and then interviewed representatives I was able to establish contact with from organizations or other entities. I found that there were a variety of approaches that were impactful and significant in preventing waste, depending on the type being assessed, from legislative action to consumer education. In my interviews with best practices candidates, I found that building partnerships with other departments and establishing communication can help to be an effective approach in attaining a circular economy. These results are significant as they indicate the most effective ways to subvert waste across industries and sectors. By promoting greater corporate responsibility, awareness and further research on prevention, this concern can be mitigated.
Hospitals are recognized as centers for healing the human population, but their energy-intensive and wasteful operations harm the environment, which inevitably harms humans that will need to seek care at these hospitals. With the pandemic, this unsustainable cycle only worsened as many hospitals shifted their focus and funding toward COVID-19 treatment. In this study, I sought to paint a picture of the state of hospital sustainability prior to and during the COVID-19 pandemic to assess its resilience in a time of crisis. As a technical sales intern with Nalco Water, I serviced various water treatment processes that aimed to improve hospital sustainability and minimize risk, while also collaborating with representatives to identify valuable cost-savings projects for 20 clients. Additionally, I conducted seven interviews with healthcare experts to understand any changes in sustainability resilience from the pandemic. From these methods, I learned that environmental stewardship remained at the forefront of hospitals’ mindsets, followed by community health and cost-savings. However, major revenue losses continued to act as the primary limitation for sustainable development, along with reduced employee bandwidth. Based on these findings, hospital leaders should pursue life cycle assessments to understand the cyclical nature of their harmful activities. Lawmakers can also use these trends to inform the development of regulations that target weaknesses in hospital sustainability. With this knowledge and guidance, hospitals will be better equipped to pursue sustainable solutions that enhance hospital resilience, preparing them to survive in future crises sooner than later.
The construction industry is one of the biggest polluters of greenhouse gases in the world. There are a lot of changes that must be done to reach the goal of becoming a more sustainable industry for the environment. The industry differs buildings into three different styles, energy-efficient, environmentally friendly, and sustainable. These styles are very similar in their purpose by include different kind of factors improve the buildings impacts on the environment.

To reduce the pollution even more experts have come up with a couple of construction methods, to help the companies keep their emissions low during the process. The two most common methods are prefabricated construction, which is the preferred method of environmentalists because there is less time spent on the construction site due to the panels being produced at an efficient off-site facility. The second method is the onsite construction method, where most of the walls and ceilings get produced on site. Many companies are struggling on adapting to the new modern technologies because there are many obstacles put into their way. The biggest obstacle is the financial one, many companies cannot afford these methods because they will never benefit from them. This means that the national governments must come up with solutions to help the industry financially, so that more companies can afford to build sustainable.
HOW COLLEGE CAMPUSES IN NORTH AMERICA CAN IMPROVE SUSTAINABLE TRANSPORTATIONS

Session: B, Breakout Room #8
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Site Supervisor: Stephen Classen, Common Caws for Sustainability, Cascadia College
Alexa Russo, Common Caws for Sustainability, University of Washington Bothell
Faculty Advisor: Kristina Straus, Program on the Environment, University of Washington

Global warming is a huge problem in the globe, and the US is no exception. Transportation emissions account for more than 30% of greenhouse gas emissions. If sustainable transportations are not addressed, emissions will continue to happen and factors such as congestion will continue to exist. The aim of this study was to explore students/faculties preferences of transportation on North America college campuses in order to know the current trend and room of improvement for sustainable transportation. To accomplish this task, I interviewed different fields of experts like biking clubs to explore the status quo of students’ and faculties’ habits on taking transportations. The trends will help to determine ways to improve sustainable transportation such as incentives, more sustainable transportations being available, etc. For instance, findings show that UW Seattle employees, particularly students, generally support sustainable transportation and biking facilities, and many college campuses in America show similar trends. These positive results suggest efforts on college campuses have been made toward sustainable transportations. However, factors such as roads and building designs still need to improve to provide convenience of sustainable transportation and improve awareness about this topic. Thus, communications and planning are imperative to make sustainable transportations become more accessible to more people in terms of factors such as prices and expansion of transits around campuses. Awareness (eg. Students participation in transportation initiative) is also important in improving transportations. Finally, existing helpful programs like Transportation Demand Management should continue to be implemented to ensure effectiveness of commutes on campus.
At the intersection of system sustainability and economic equity, Seattle Public Utilities (SPU) assists its customers through Low-Income Water Conservation Programs. These programs aim to reduce utility bills for low-income customers while also conserving the city’s water supply by replacing old and inefficient toilets in low-income homes with newer and highly efficient models. However, program participation has been rapidly declining in recent years. In order to continue its mission of assisting low-income customers while also conserving water, SPU must analyze these programs and decide whether or not they are achieving their objectives. The purpose of this study was to determine the remaining water conservation and bill reduction potential of these programs, and to explore other program pathways which may increase this potential. To accomplish this task, I helped build a functional model with the ability to project the conservation and bill reduction potential of various measures across several years. I also conducted a telephone survey of program participants in order to determine customer satisfaction. My findings suggest that these programs not only have remaining potential to save money and water, but can also significantly increase the quality of living for participants. Additionally, there are several program pathways available which can greatly increase this potential. These results imply a major opportunity for city governments to increase the long-term system sustainability of their natural resources while also promoting economic equity and increased living standards within their communities.
Mandating residential energy disclosure will force the local economy to place a greater weight on home efficiency when buying a home. This will ultimately help us achieve our County’s energy reduction goals for 2030. This problem urged the questions of- What form of energy disclosure is most effective for King County? As well as, how do we best communicate these ideas to the relevant stakeholders to pass this bill? I asked these questions in order to practice environmental research communications, as well as perform some much needed research into these topics for The King County Executive Office. To answer these, I followed these methods during my internship. For the first five weeks, I researched and synthesized the findings of existing programs as well as conducting interviews with the realtors association, the community, and the along County climate team. Following this I built and iterated a slide deck that helped me communicate these results. I found that the most effective form of energy disclosure came in the form of a mandatory, asset-based, and at the time of listing audit that placed each home on a standardized scale displaying its efficiency. These results are significant because it paves the way for future county legislation. Further, these results maximize future home equity in regards to sustainability. Finally, this research helps us as a county stay on track towards achieving our 2030 climate goals.
HOW RE-CONNECTING WITH NATURE BEGINS IN THE BACKYARD: WHAT MOTIVATES PEOPLE TO ENGAGE IN SMALL-SCALE ECOLOGICAL DESIGN PROJECTS

Session: B, Breakout Room #11
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Site Supervisor: John Coghlan and Jenna Duncan, HomeGrown Organics
Faculty Advisor: Eli Wheat, Program on the Environment, University of Washington

A healthy connection to the environment has many psychological and physical benefits, as well as increasing people’s motivation to take environmentally-friendly actions. However, most people are very disconnected from their local ecosystem. This research project focuses on examining the motivations behind engaging in small-scale residential permaculture and landscape design projects, and the benefits to people and their connection to the ecosystem they live in. During my internship with HomeGrown Organics, I interviewed people involved in garden and yard projects around Seattle and Vashon Island, most of whom were past clients of HGO. These semi-structured interviews focused on the experiences of the interviewee with the projects they have been working on, specifically what the primary benefits are, what they have learned, and what permaculture means to them. Common themes across responses included more enjoyable time spent outside, learning about ecosystem processes, and feeling a sense of responsibility and stewardship for the land. However, there was also much variation among the responses, especially regarding what the interviewees’ motivations were and the aspects of their projects that ended up being the most valuable to them. These results highlight the need for individualized paths towards connecting with the natural environment that work for each unique situation – the needs, wants, abilities, and limitations of both the people and the land. Looking towards a more sustainable future, engaging in small-scale outdoor design projects such as permaculture is one way in which people can foster a reciprocal relationship with the ecosystem that they are a part of.
As the impacts of our changing climate become more severe, consumers are putting greater pressure on the corporate marketplace to hold companies responsible for their emissions and promote sustainable business. After decreasing their internal carbon emitting processes, companies can purchase carbon credits to further offset their remaining environmental footprint by supporting projects that aid reduction efforts worldwide. However, as the voluntary carbon market (VCM) is still relatively new, there is a lack of information available regarding program selection criteria and no standardized process for how to foster participation. During my internship at Puget Sound Beverage (PSB), a local coffee supplier, I sought to better understand the benefits and applicability of various carbon offset programs, to recommend the most suitable programs for PSB specifically. To accomplish this, I researched current business application of carbon offsets, created a comprehensive data base of 17 highly ranked programs, identified key program criteria and conducted in-depth interviews with PSB clients. This information, in addition to data collected and analyzed from scholarly literature, allowed me to develop a preliminary framework for how companies can best select an offset program, market participation to their clients and achieve carbon neutrality. Key components of this framework include a holistic understanding of the VCM, an analysis of applicable programs and early identification of company goals and client preference. Through greater participation, companies will be able to address rising global CO2 levels, while also increasing their corporate sustainability and demonstrating accountability of emissions within their communities.